



# Veterans' Perceptions and Categorical Constructs Regarding Antibiotics for Upper Respiratory Infections (URIs)



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## BACKGROUND

- Patients' knowledge, attitudes and perceptions (KAPs) about antibiotics and upper respiratory infections (URIs) informs antimicrobial stewardship interventions
- Validated patient KAP surveys for URI and antibiotics are scarce generally and nonexistent for Veteran patient populations.
- Prior research on antibiotics and URI KAPs in non-Veteran emergency department (ED) and online patient populations found shared categorical "gists," generalized categorical constructs focused on a single "bottom line."

## AIM

Assess similarities and differences between antibiotic and URI KAPs for Veteran patients, measured using a previously published survey, compared to the published results for non-Veteran patients.

## METHODS

- Published KAP survey contained 46 questions. After 3 rounds of cognitive testing with Veterans and healthcare providers, 13 questions omitted for repetitiveness, lack of clarity or low factor loadings.
- Resulting 33-item survey mailed to Veterans seen previously for URIs at 18 Veterans Affairs (VA) clinics from 01/2018–12/2019.
- Exclusions: Not evaluated in person, documented dementia, died prior to study start, >3 unanswered questions on survey
- Principal component factor analysis (PCFA) with orthogonal varimax rotation was used to evaluate Veteran responses and determine which survey questions would associate together in factors (Fig 1).
- Cronbach's alpha was used to assess each factor's internal consistency. Questions were redacted until alpha of >0.7 was reached (Fig 2).

## RESULTS (I)

- 474 of 1329 (36%) eligible Veterans returned survey; 407 met inclusion criteria (Table 1).
- PCFA of Veteran responses ultimately yielded 7 factors (Fig 2).
- Veterans' responses regarding antibiotic side effects clustered together, similar to results previously published from non-Veteran patient populations (ED patients and online patients).
- Veterans' responses about "antibiotics help" and "antibiotics don't hurt" clustered together like ED patients.
- While Veterans' responses around safety and efficacy (Factors 3 & 5) and knowledge about bacteria and viruses (Factors 4 & 5) clustered separately, for ED patients and online patients, safety and efficacy and bacteria and viruses clustered together, respectively.

## RESULTS (II)

Figure 1: Existing Non-Veteran ED and Online Patients Versus Veteran Patients Principal Component Factor Analysis

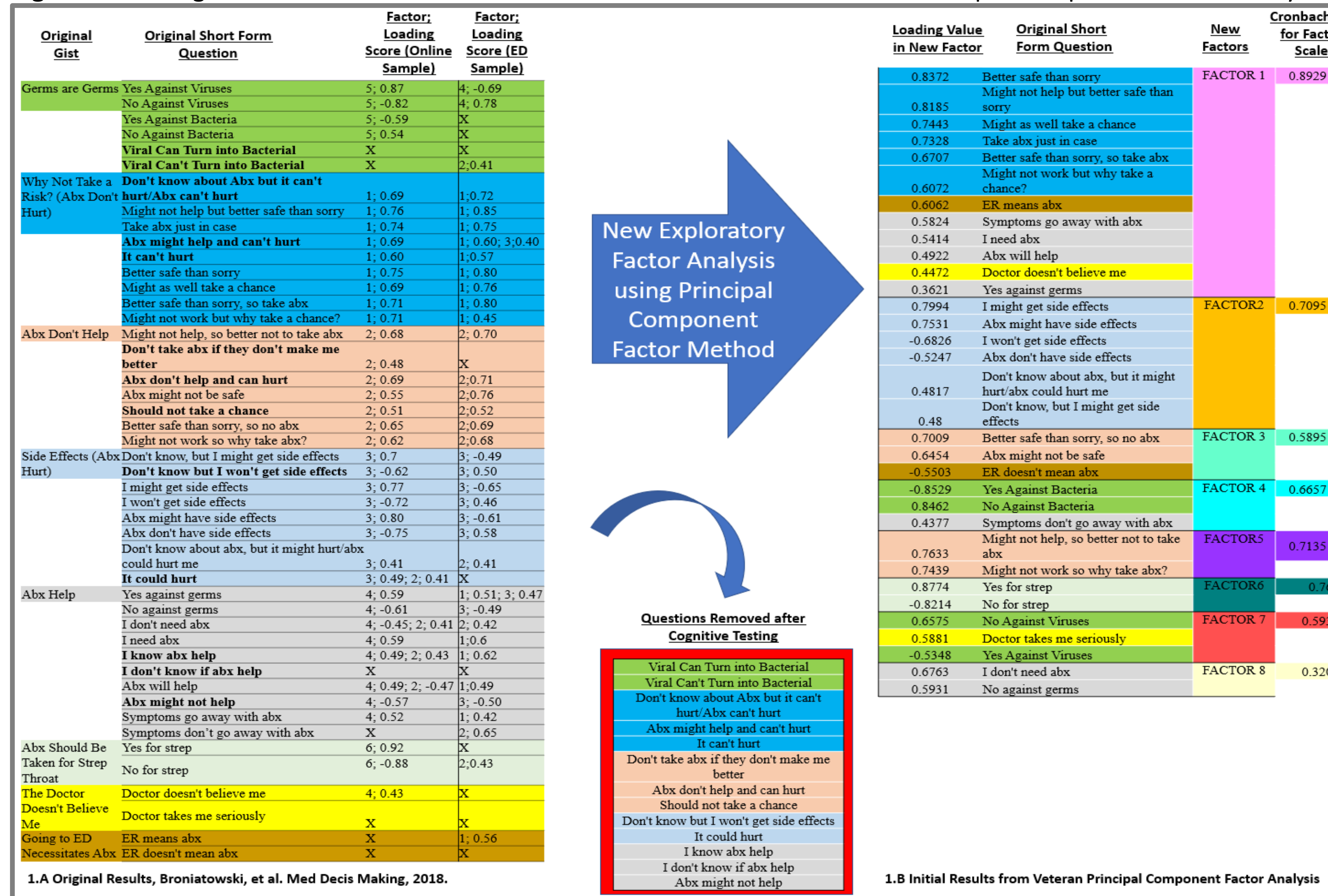


Figure 2: Revisions and Results from Edits to Improve Internal Consistency of Veteran Factors

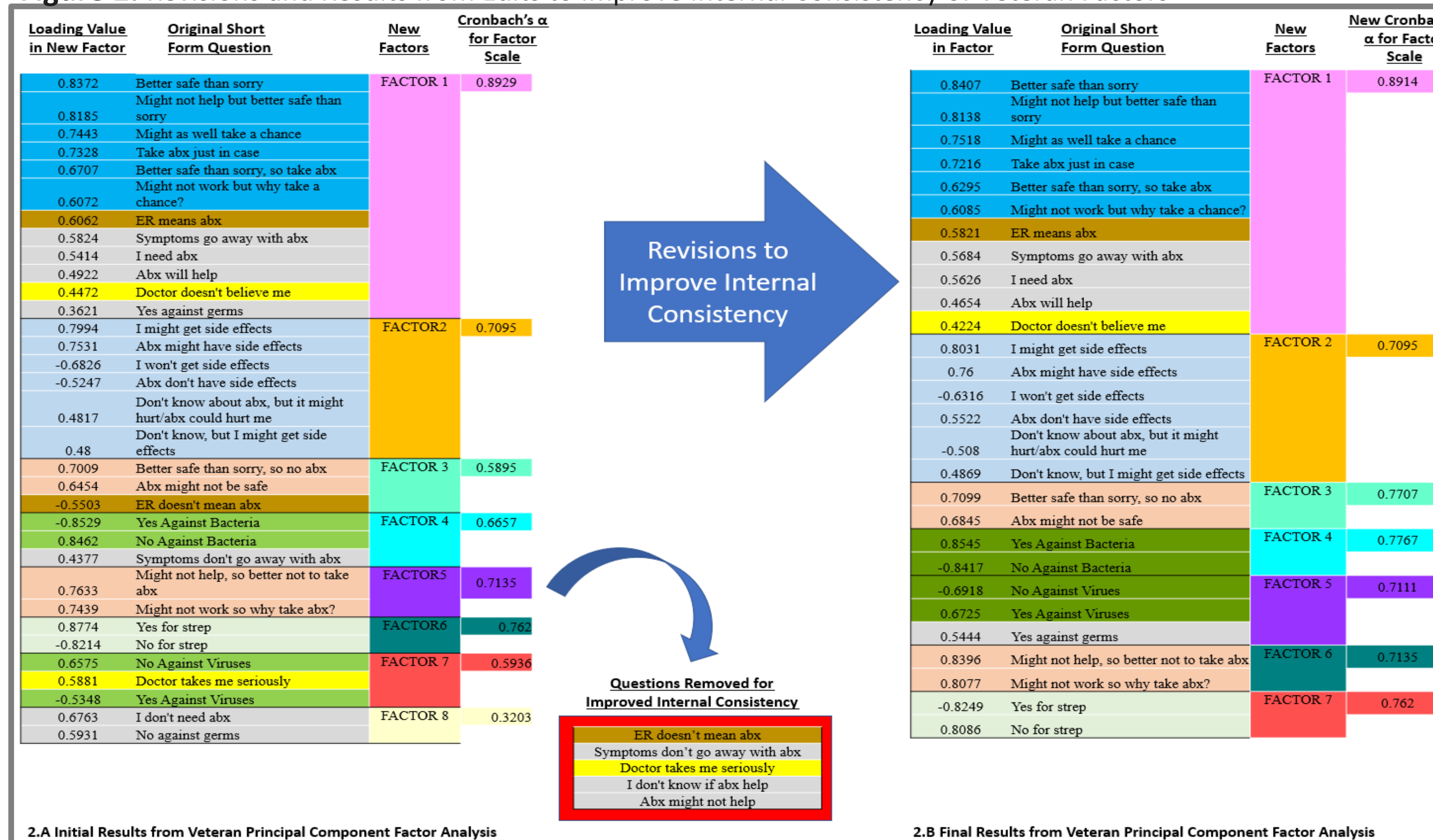


Table 1. Veteran Demographics

Veteran Characteristic	Respondents N=407 (%)
Female	59 (14.5%)
Age (Years) <sup>a</sup>	63.7 ± 12.0
Urban Rural County Classification by Veteran Address	
Large Central Metro	37 (9.1%)
Large Fringe Metro	88 (21.6%)
Medium Metro	121 (29.7%)
Small Metro	28 (6.9%)
Micropolitan	93 (22.89%)
Non-Core	40 (9.8%)
Smoker <sup>b</sup>	86 (21.1%)
Underlying Pulmonary Disease <sup>c</sup>	25 (6.1%)
Underlying Congestive Heart Failure	33 (8.1%)
Estimated Glomerular Filtration Rate (mg/dL) <sup>a</sup>	77.6 ± 21.7
Immunosuppressed	5 (1.2%)
Insurance Documented	319 (78.4%)

<sup>a</sup> Variables are reported in mean ± standard deviation in specified units  
<sup>b</sup> Cigarettes, cigars or illicit substances smoked within 1 year prior to visit  
<sup>c</sup> Excludes obstructive sleep apnea and asthma

## CONCLUSIONS

- While Veterans do share some KAPs of antibiotics for URIs with ED patients and an online sample, the way in which they group ideas in some areas, including for antibiotic safety/efficacy and knowledge about viruses and bacteria, is different.
- This suggests that Veterans may process information about URIs and antibiotics differently than other patient populations.
- Further testing in both Veteran and non-Veteran populations is necessary to validate and assess reliability of this KAP survey as an antimicrobial stewardship tool.

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